

STATE ROUTE 56

CORRIDOR STUDY



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I INTRODUCTION

Project Purpose

The City of Baxter has identified the need to plan for the impacts of expected growth in traffic along State Route (SR) 56, also known as Gainesboro Road. This route runs north-south along the eastern edge of the city. As shown in the figure to the right, the study area includes a portion of SR-56 from US 70N to the Interstate 40 (I-40) interchange. A portion of Baxter Road south of the I-40 interchange (which is not designated as SR 56) was also examined in this study.

The City of Baxter and the Tennessee Department of Transportation (TDOT) initiated the SR-56 Corridor Study in November 2018 after the City made a successful application for Tennessee Community Transportation Planning Grant (CTPG) funds. This document identifies the vision and goals for the study and presents findings of the study team in the form of a data inventory, existing conditions review, future conditions projections, and recommendations for improvements and policy guidance.



SR-56 CORRIDOR PLAN STUDY AREA

CONTEXT

The City of Baxter is experiencing an increase in traffic congestion along the major thoroughfare of SR-56 due to new development and a rising population. On the far north side of the corridor, at the SR-56 intersection with US 70 N, there is 13 acres of potential commercial development. In addition, the middle school and high school are both located along US 70 N in this area, generating heavy traffic in morning and afternoon hours.

On the south end of the SR-56 corridor, around the I-40 interchange, there are already significant traffic issues related to trucks and other vehicles entering and exiting a busy truck stop whose access is very close to the I-40 ramps. Additional commercial development is expected in this immediate area, along with new shops and restaurants that are proposed on the south side of the interchange.

It should also be noted that, since the CTPG was awarded, it was



CUMMINS FALLS

announced that Portobello America, Inc. is planning to locate its U.S. headquarters and first U.S. production facility in Baxter. Portobello, which is headquartered in Brazil, will build a new facility at the former Tennessee Motor Speedway site, as shown in the figure below. Construction of the facility is set to be complete by 2021 and is projected to create 220 jobs in the area.



PROPOSED PORTOBELLO AMERICA, INC SITE LOCATION

SR-56 serves not only Baxter, but also provides the main connection to Gainesboro and Celina, as well as Cummins Falls State Park. Cummins Falls State Park, located 17 miles north-east of Baxter, is a waterfall on the Blackburn Fork State Scenic River and has been popular with residents of Jackson and Putnam counties for more than 100 years. Today Cummins Falls hosts more than 300,000 visitors a year and was named one of “America’s Best Swimming Holes” by Travel and Leisure magazine.

In light of this growth, Baxter wishes to develop strategies to promote its community and economic development while also preserving safety for Interstate travelers and SR-56’s value as a major route for visitors.

GRANT APPLICATION BACKGROUND

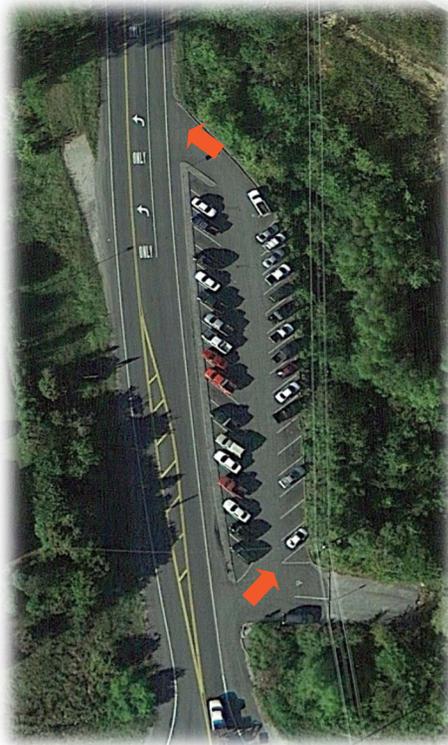
The purpose of TDOT's Community Transportation Planning Grant (CTPG) is to provide resources to assist Tennessee's small and rural communities in developing transportation plans for preparation of future transportation systems, land use, and growth management issues. Specifically, the goals of the program are to:

- Aid rural municipalities with the creation of planning documents that support improvements in traffic flow, safety, and overall efficiency of the transportation system.
- Provide rural city governments with planning resources to achieve visions as related to transportation and land use needs that promote future economic growth.
- Assist rural municipalities with planning efforts that define the transportation cohesiveness between multimodal transportation systems and local land use objectives that achieve the statewide transportation goals.

Project partners included the City of Baxter, TDOT, and the Upper Cumberland Development District.

II EXISTING CONDITIONS

The purpose of the existing conditions analysis is to understand and identify issues, deficiencies, and opportunities to be addressed. The existing conditions analysis also establishes a baseline to which anticipated future conditions can be measured and various recommendations can be compared.



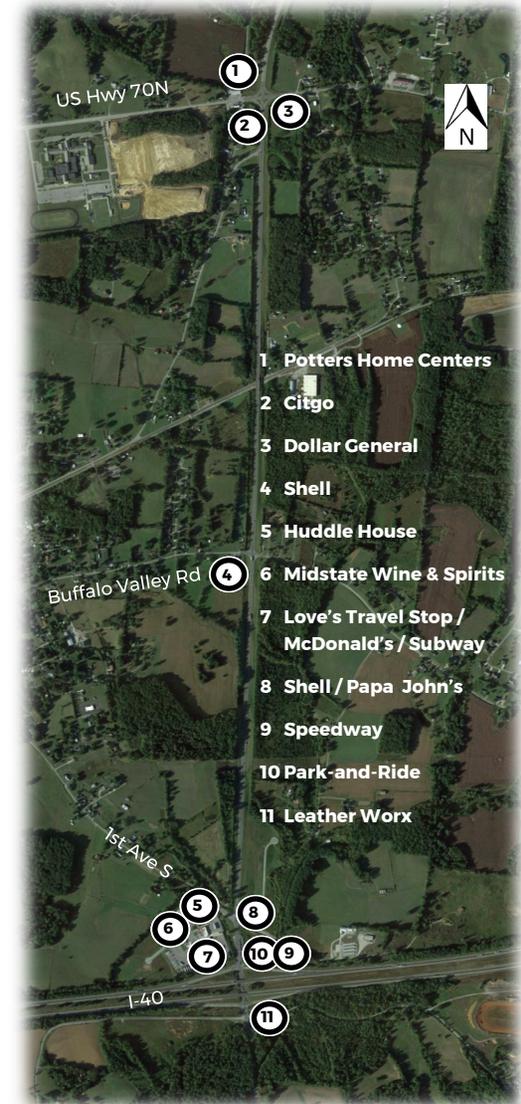
PARK-N-RIDE LOT ACCESS

EXISTING DEVELOPMENT

The SR-56 study corridor is primarily undeveloped, with the exception of highway oriented uses built around the I-40 interchange and a small number of developments at the intersections of Buffalo Valley Road and US Hwy 70 N. The map to the right illustrates the location and current use of each property.

SR-56 is a limited access roadway. Therefore, direct access to and from adjacent parcels is prohibited. Drivers must instead use a cross-street to access development. This lack of direct access has contributed to the lack of development along the SR-56 corridor.

The only exception to this limited access policy is the park-and-ride lot, (#10 on the map), which has direct access to SR-56. The lot is located north of the I-40 interchange and south of Flea Market Road. As shown in the picture to the left, the lot has right-in / right-out only access. Furthermore, the park-and-ride has a capacity of 40 vehicles, is paved and lighted, and is maintained by TDOT.

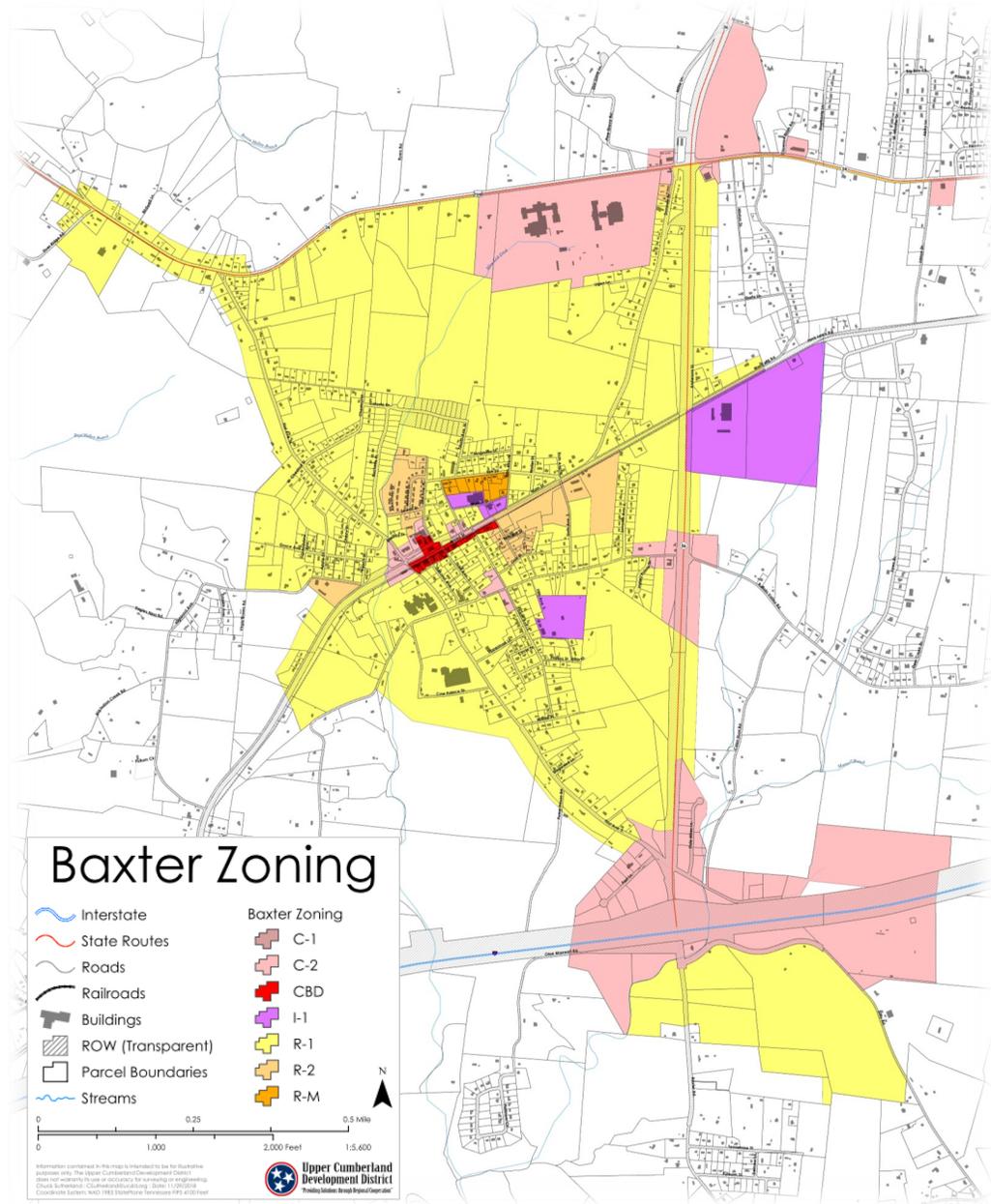


EXISTING SR-56 CORRIDOR DEVELOPMENT

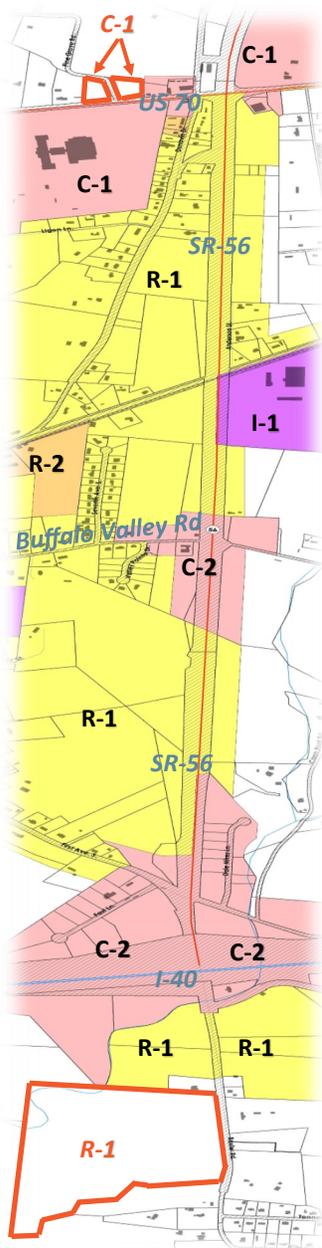
ZONING

In its zoning ordinance, the City of Baxter promulgates permitted land uses, prohibited land uses, and land uses permitted on appeal for properties within each district. Each zoning district also establishes yard area, lot width, height, parking, access control and signage requirements for each property. The Baxter zoning ordinance provides for seven designated zoning districts:

- **R-1, Low Density Residential District:** The purpose of the R-1 District is to provide a low density residential environment having good access to schools, public water and sewer, and other community services, but well separated from other incompatible uses and activities.
- **R-M, Residential Medium Density District:** This residential district is intended to promote and encourage the establishment and maintenance of a suitable environment for urban residence in areas which by location and character are appropriate for occupancy by two-family dwellings where public wastewater services are available. One of the important purposes of this district is to create adequate standards of residential development in order to prevent overcrowded and unhealthy conditions. The intensity of land use should not be so great as to cause congestion of buildings or traffic or overload existing sanitary facilities. Densities should be limited to provide adequate light, air and usable open space for occupants and adequate space for all related facilities.
- **R-2, High Density Residential District:** The purpose of the R-2 District is to provide a high density residential environment having good access to schools, public water and sewer, and other community services, but well separated from other incompatible uses and activities.



CITY OF BAXTER EXISTING ZONING MAP



ZONING, SR-56 CORRIDOR

- **CBD, Central Business District:** The Central Business District is intended to provide an area for the conduct of community and regional retail and service business especially for those sales and service uses which require a central location, which generate substantial pedestrian traffic, and which are mutually benefited by close proximity to other uses of similar nature and requirement. It is further intended to exclude those commercial and industrial activities which are characterized by trucking other than stocking and delivery of retail goods, which cater to automobiles; which interfere with pedestrians or pedestrian circulation, or which create hazards, noise, vibration, smoke, dust, odors, glare, heat or other objectionable influences or nuisances.
- **C-1, Central Commercial District:** The purpose of the C-1 District is to provide an area for the conduct of community and regional retail service business especially for those sales and service uses which require a central location, which generate substantial pedestrian traffic, and which are mutually benefited by close proximity to other uses of similar nature and requirement and as a transition commercial district to the CBD District. It is further intended to exclude those commercial and industrial activities which are characterized by trucking other than stocking and delivery of retail goods, which cater to automobiles; which interfere with pedestrians or pedestrian circulation, or which create hazards, noise, vibration, smoke, dust, odors, heat or other objectionable influences or nuisances.
- **C-2, General Commercial District:** The intent of the C-2 General Commercial District is primarily to provide areas for the location of general commercial business and those enterprises which are oriented toward serving occupants of automobiles and trucks and/or their vehicles.
- **I-1, Light Industrial District:** The intent of the I-1 District is to provide areas in which the principal use of land is for light manufacturing and assembly plants, processing, storage, warehousing, wholesaling and distribution. It is the intent that permitted uses are conducted so that noise, odor, dust and glare of each operation is minimal.

The map at left illustrates existing zoning designations throughout the SR-56 project corridor. The area is predominantly zoned General Commercial (C-2) and Central Commercial (C-1) around the intersections and Low Density Residential (R-1) in the remaining areas. Two zoning categories, Residential Medium Density (R-M) and Central Business District (CBD), are not currently represented within the project area. It should also be noted that three additional parcels (outlined in brown) have recently been annexed into the City of Baxter. These include a 60-acre parcel south of I-40 and west of Baxter Road, and two 2.2-acre parcels north of US 70 N and west of SR-56.

ROADWAY FEATURES

SR-56 is functionally classified by TDOT as a rural minor arterial roadway. Primarily it is a 2-lane roadway with one 12-foot travel lane in each direction, 9-foot outside shoulders and no pedestrian facilities. The posted speed limit is 45 mph from I-40 to just north of 1st Avenue / Flea Market Road, where it transitions to 55 mph. Data for SR-56 was obtained from TDOT via the Enhanced Tennessee Roadway Information Management System (ETRIMS). The table below provides a detailed description of roadway features for the corridor.

Start Point (L.M.)	End Point (L.M.)	Functional Class	Right of Way (ft)	Type of Terrain	Land Use	Number of Lanes	Speed Limit
0.560	0.650	Urban / Minor Arterial	200	Rolling	Commercial	2	45
0.650	0.820	Urban / Minor Arterial	200	Rolling	Commercial	2	45
0.820	2.740	Urban / Minor Arterial	200	Rolling	Rural	2	55
2.740	2.860	Urban / Minor Arterial	200	Rolling	Rural	3	55

TDOT ETRIMS



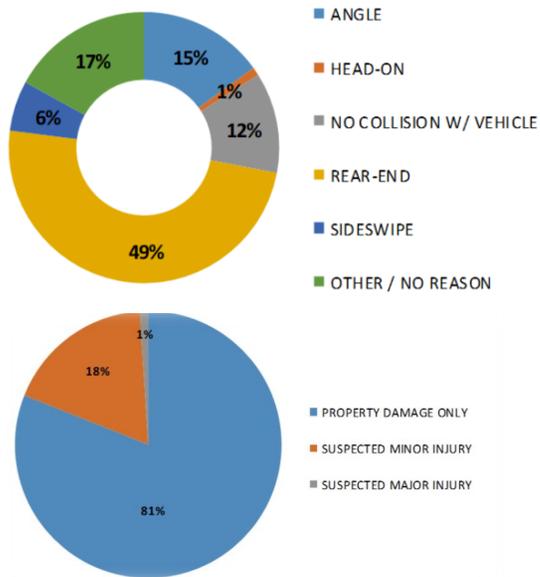
SR-56 NB, NORTH OF 1ST AVE



SR-56 NB AT I-40 OFF RAMP

CRASH HISTORY

Crash data used in this analysis was obtained from TDOT via ETRIMS, which contains georeferenced crash data for on all roadways in the state. This analysis focused on crashes along the SR-56 project corridor and did not review crashes that occurred on intersection side streets. Crash data points were obtained for a five year period, 2014-2018. During this five year period there were 82 crashes. Analysis of this data revealed the following:

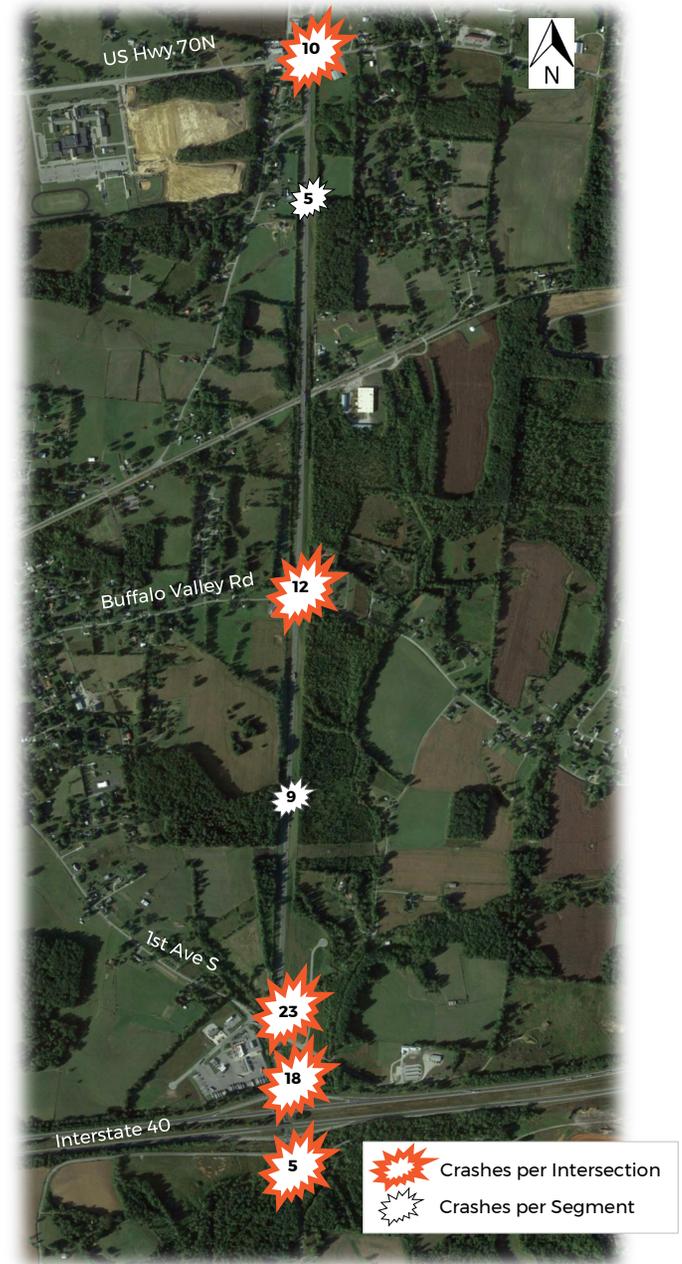


CRASH TYPE

- The primary crash type was Rear-End collision – 49%
- Rear-end crashes occurring at an intersection – 83%
- Intersection related rear-end crashes between the I-40 interchange and 1st Avenue / Flea Market Road – 63 %

CRASH DAMAGE / INJURY

- Property damage only – 81%
- Crashes with injury – 19%
- No fatal injury crashes were reported.



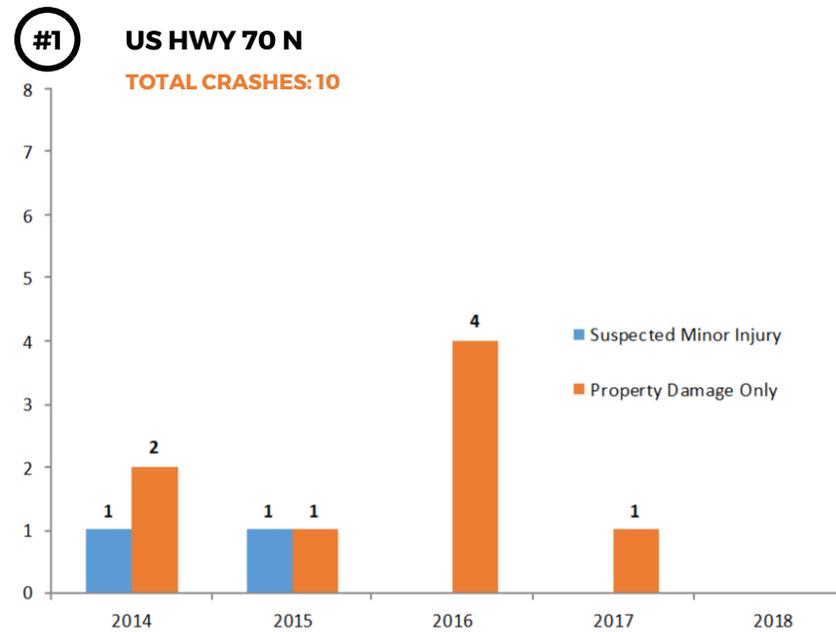
ETRIMS CRASH DATA AND LOCATIONS: 2014-2018

2014-2018 HISTORIC CRASH DATA BY INTERSECTION



INTERSECTION CRASH ANALYSIS LOCATIONS

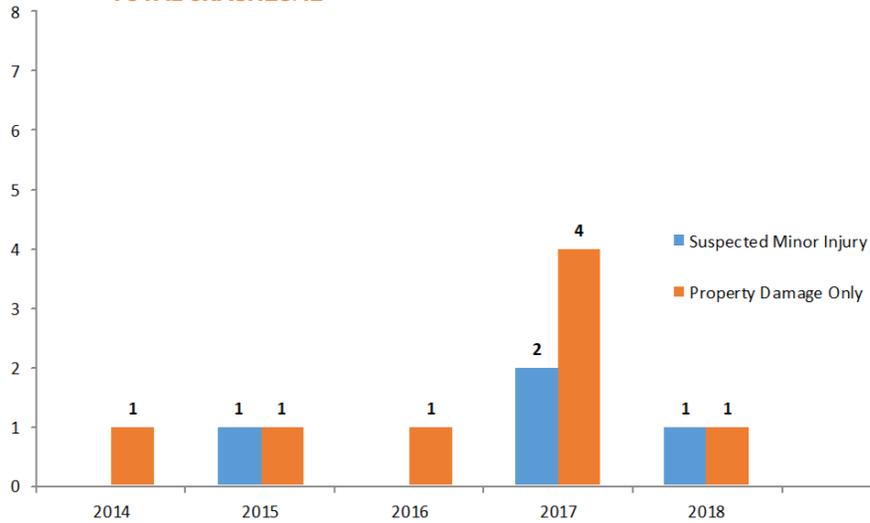
Crash data for each intersection along SR-56 within the study corridor was obtained from TDOT via ETRIMS for a five year period, 2014-2018. Based on this data, it was determined that the majority of crashes occurred on the south end of the corridor. The intersection of SR-56 and 1st Avenue / Flea Market Road (#3) experienced the highest number of crashes with a total of 23, which included the only serious injury crash within the corridor during this time period. Of the five intersections analyzed, there were none with crash rates that exceeded the statewide average.



#2

BUFFALO VALLEY RD

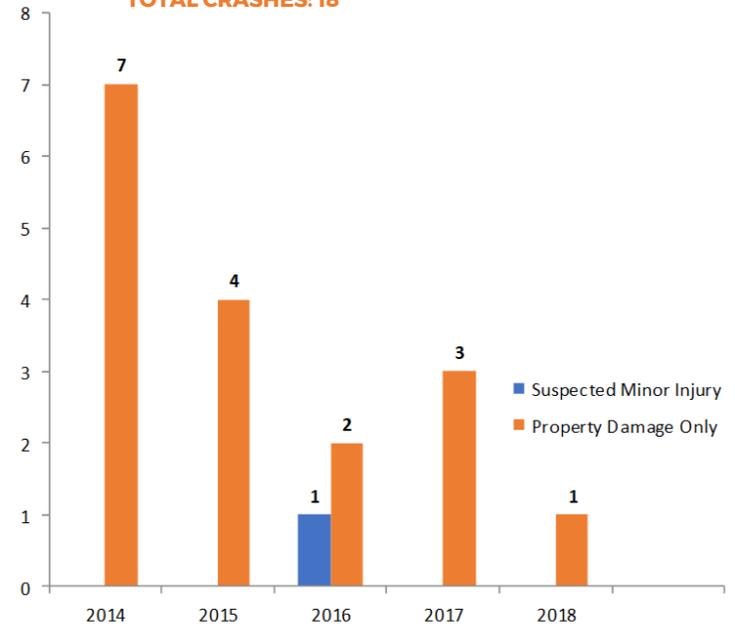
TOTAL CRASHES: 12



#4

WESTBOUND RAMPS

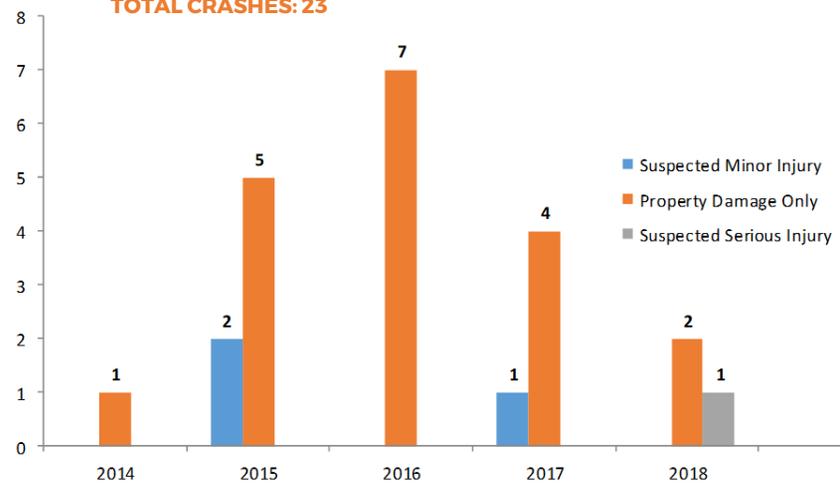
TOTAL CRASHES: 18



#3

1ST AVE / FLEA MARKET RD

TOTAL CRASHES: 23



#5

EASTBOUND RAMPS

TOTAL CRASHES: 5

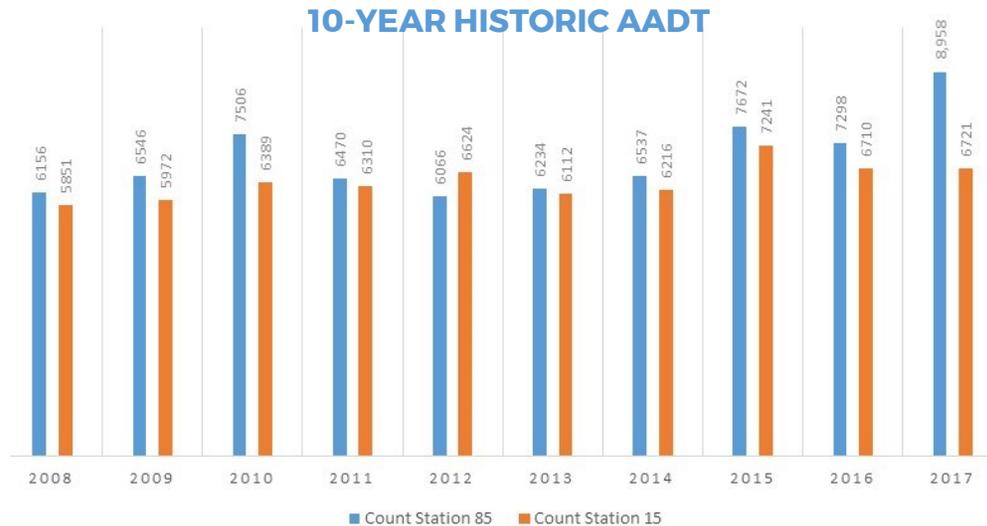


TRAFFIC CONDITIONS

The existing traffic conditions in the study corridor were assessed to identify deficiencies relative to existing traffic capacity and operations and to establish a baseline condition against which the anticipated future conditions and potential impacts of future traffic growth can be evaluated. The study team compiled historic bi-directional Annual Average Daily Traffic (AADT) volumes from TDOT, intersection peak hour traffic volumes, truck traffic, pedestrian counts, and peak hour intersection operations.

AVERAGE ANNUAL DAILY TRAFFIC (AADT)

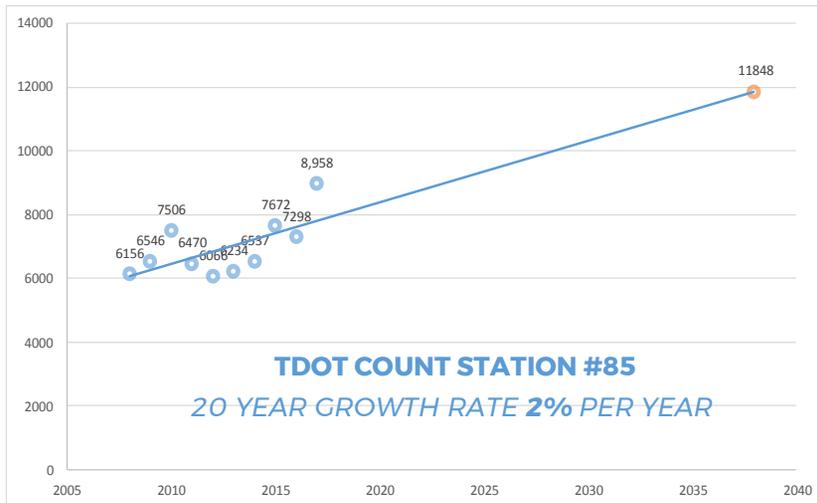
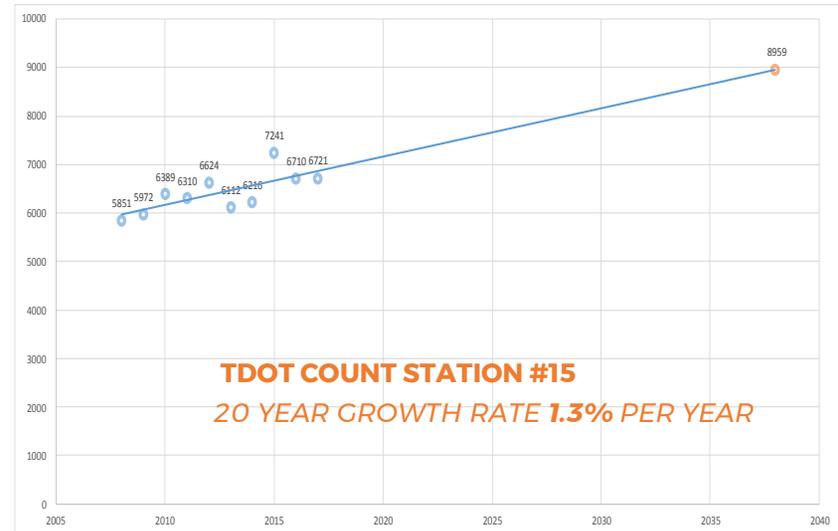
TDOT collects 24-hour bidirectional traffic volume data annually at count stations across the state. This data is adjusted using traffic variation factors (TVF) that normalize the data by accounting for weekly and monthly changes in traffic volumes. TDOT then publishes the resulting annual average daily traffic (AADT) for each count station, defined as the total volume of vehicles passing through the count station in a year, divided by 365. The map to the right illustrates the TDOT count station number and location that were used for this analysis. The graph below presents ten years, 2008-2017, of historic AADT at each count station. The trend is a gradual increase in traffic volumes at station #85, near I-40, while volumes at count station #15 have remained relatively steady.



TDOT AADT COUNT STATIONS

GROWTH RATE PROJECTIONS

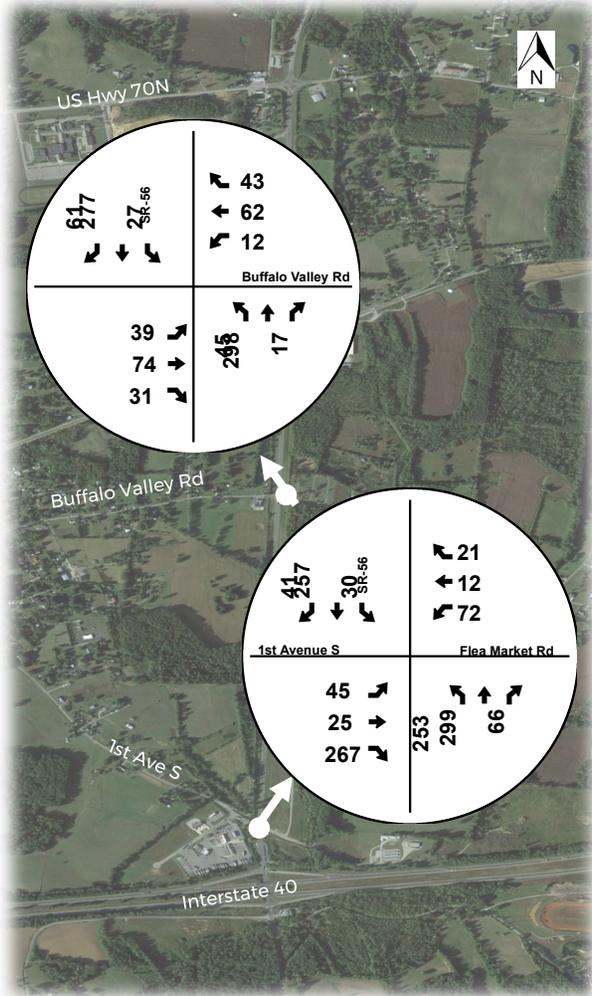
The 10-year historic AADT data was then used to determine the growth rate of traffic during the past ten years along the corridor and to project the growth rate of traffic over the next 20 years for future analysis. As shown in the figures below, TDOT count station #15 has a projected 20-year growth rate of 1.3% per year and count station #85 has a 20-year growth rate of 2% per year.



TURNING MOVEMENT COUNTS

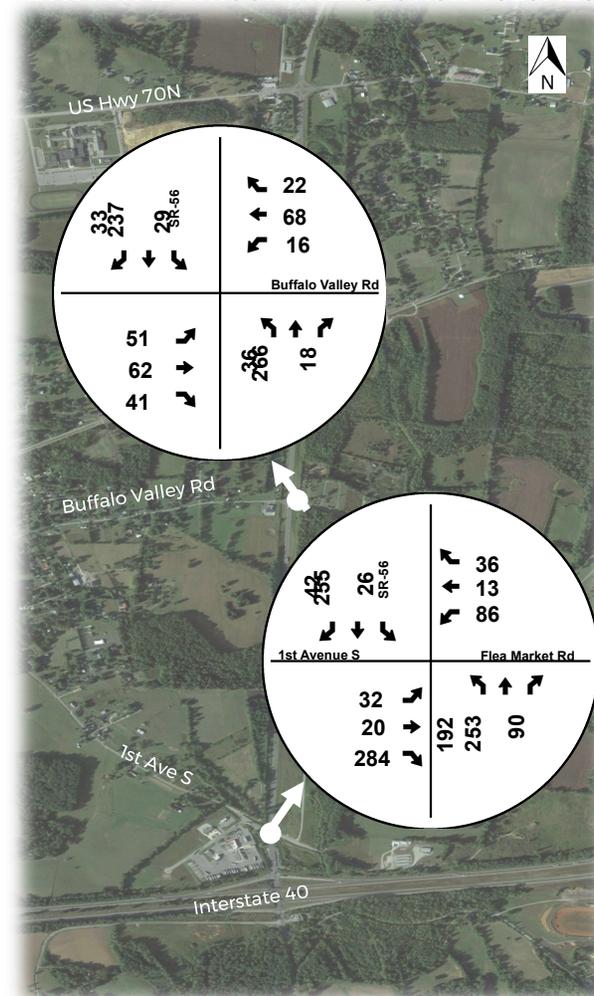
To establish existing traffic volumes within the study area, twelve-hour intersection turning movement counts were collected on December 12, 2018 at two intersections: SR-56 and 1st Avenue / Flea Market Road and SR-56 at Buffalo Valley Road. The counts were conducted from 6:00 am to 6:00pm using video cameras on site and processed manually. From the turning movement counts, the AM and PM peak hours were determined to be 7:00AM to 8:00AM and 3:00PM to 4:00PM. Existing peak hour totals are shown in the maps below.

2018 AM PEAK HOUR INTERSECTION VOLUMES



AM PEAK HOUR: 7:00-8:00 AM

2018 PM PEAK HOUR INTERSECTION VOLUMES

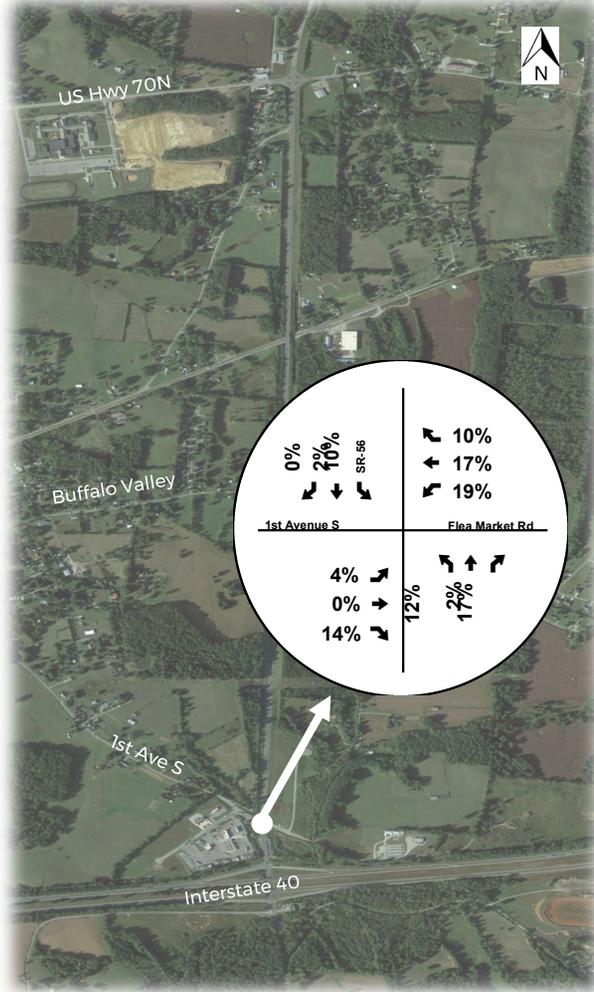


PM PEAK HOUR: 3:00-4:00 PM

EXISTING 2018 PEAK HOUR TRUCK TRAFFIC PERCENTAGES

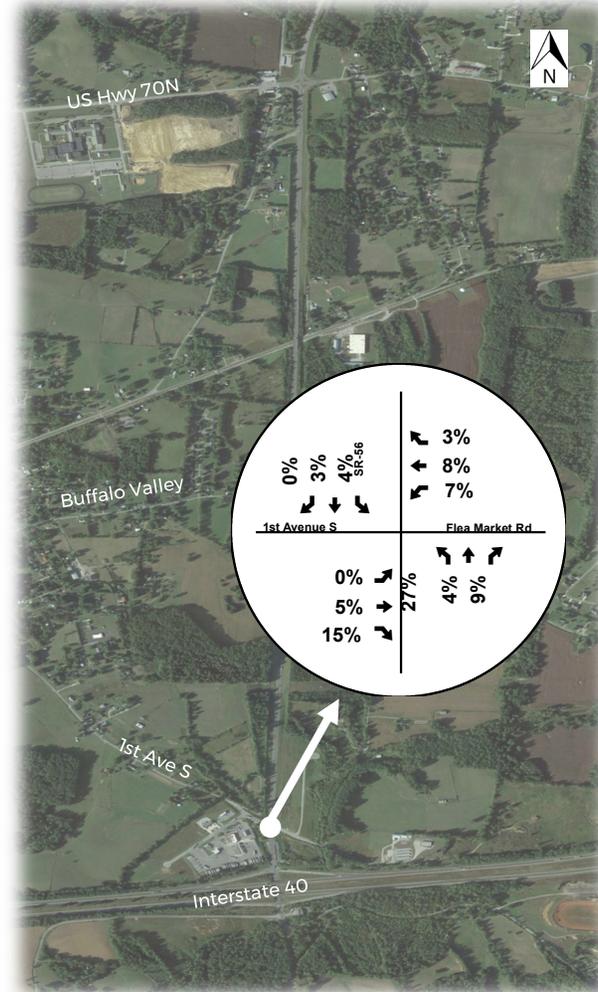
Video of the AM and PM peak hour turning movement count data, as described on the previous page, was manually processed to determine the percent of truck traffic at the intersection of SR-56 and 1st Avenue / Flea Market Road. This intersection was identified as having congestion issues related to traffic entering and exiting the Love's Travel Stop just west of the intersection. The figure below illustrates the percentage of truck traffic at each movement during the AM and PM peak hours.

2018 AM PEAK HOUR TRUCK TRAFFIC PERCENTAGES



AM PEAK HOUR: 7:00-8:00 AM

2018 PM PEAK HOUR TRUCK TRAFFIC PERCENTAGES



PM PEAK HOUR: 3:00-4:00 PM

TRAFFIC OPERATIONS

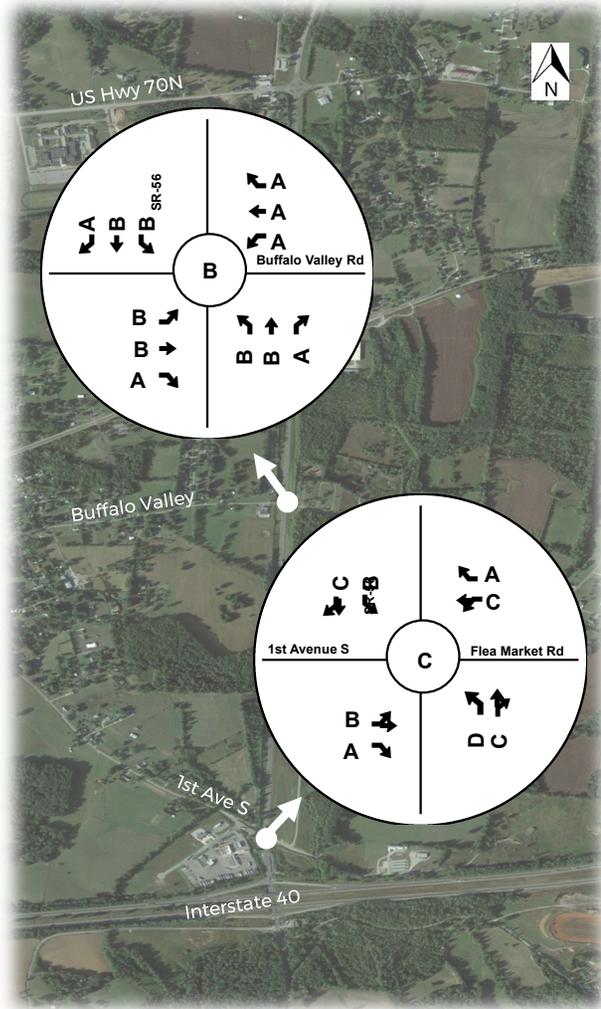
To evaluate the existing traffic operations at the study intersections, AM and PM peak hour capacity analyses were performed per the calculations outlined in the Highway Capacity Manual (HCM). The HCM provides operational analysis methodology for several types of transportation facilities, including unsignalized and signalized intersections, both of which are used in this analysis. The HCM prescribes the use of levels of service (LOS) to characterize operational conditions within the study area. LOS is a qualitative measure, defined by the HCM, which describes the operational conditions of a transportation facility in terms of general service measures, such as speed, travel time, freedom to maneuver, interruptions, and user comfort and convenience. Six levels are defined for all transportation facilities with operational analysis methodology in the HCM; the levels are designated using letters from “A” to “F”, with “A” representing the best operational conditions and “F” the worst. The table below lists each LOS and its definition for vehicular operations. Using existing turning movement counts a level of service analysis was performed at each intersection. Currently, both intersections are operating at an acceptable LOS. The existing LOS for each movement and the overall LOS for each intersection is illustrated in the map on the following page.

LOS	VEHICULAR OPERATIONS DEFINITION
A	Free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver with the traffic stream. The general level of physical and psychological comfort provided to the driver is high.
B	Reasonable free flow operations. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort provided to the driver is still high.
C	Flow with speeds at or near free flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension.
D	Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels.
E	At lower boundary; the facility is at capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
F	Breakdowns in traffic flow. The number of vehicles entering the highway section exceeds the ability of the highway to accommodate that number of vehicles. There is no room to maneuver. The driver experiences poor levels of physical and psychological comfort.

EXISTING 2018 INTERSECTION TRAFFIC OPERATIONS

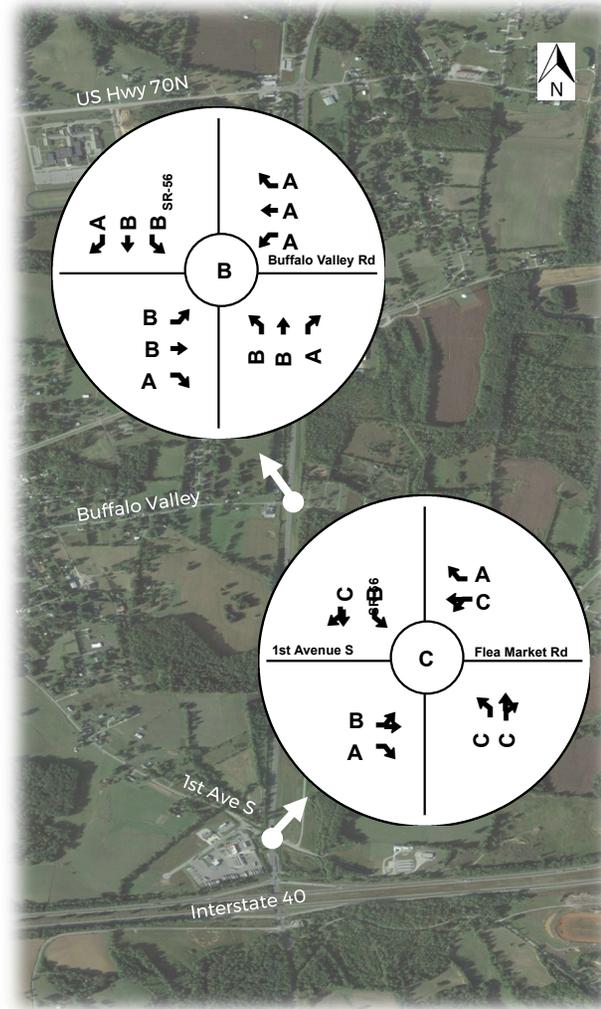
As shown in the figures below, the study intersections currently operate at an overall acceptable level of service during both the AM and PM peak hours. The overall intersection LOS is shown in the circle at the center of each diagram. Individual LOS for each turning and thru-movement are labeled for each approach to the intersection. During the AM peak hour, the northbound left movement at the intersection of SR-56 and 1st Avenue / Flea Market Road operates at LOS D.

2018 AM PEAK HOUR INTERSECTION LOS



AM PEAK HOUR: 7:00-8:00 AM

2018 PM PEAK HOUR INTERSECTION LOS

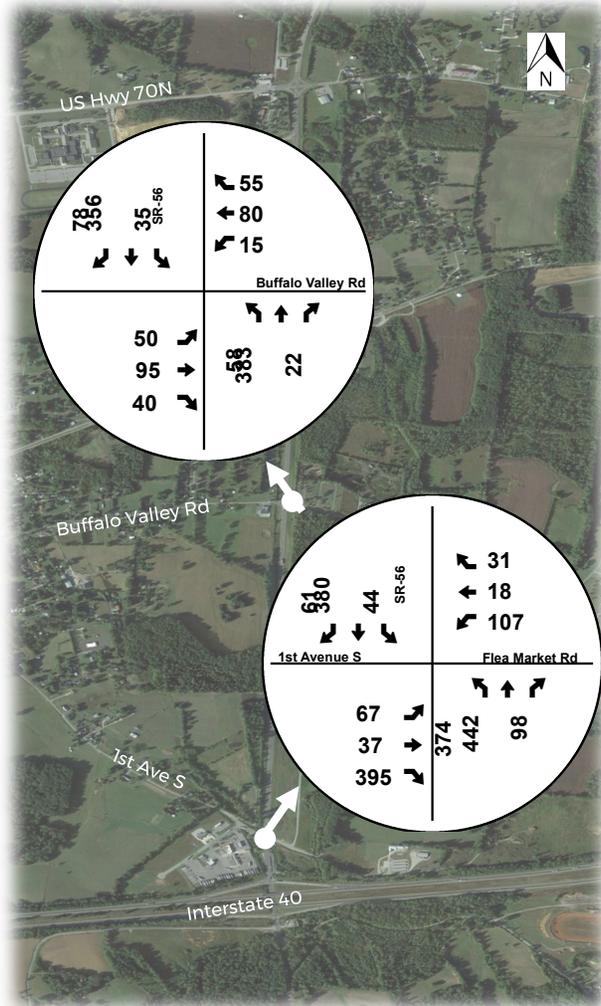


PM PEAK HOUR: 3:00-4:00 PM

II FUTURE CONDITIONS

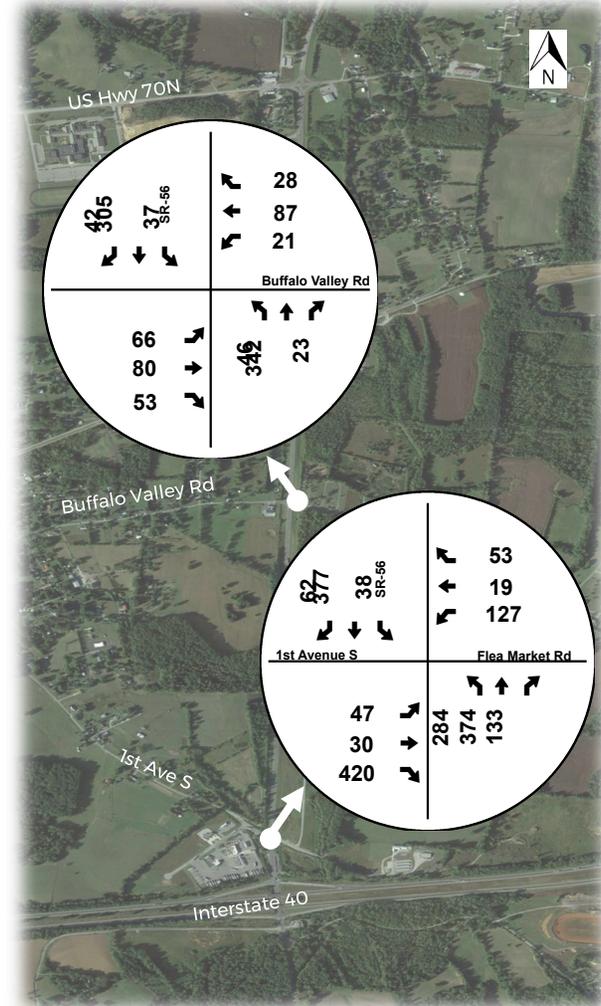
The purpose of the future conditions analysis is to understand and identify issues and deficiencies that may need to be addressed as the city grows. Existing traffic volumes were forecasted 20 years into the future to determine 2038 conditions. The growth rates, as discussed in the existing conditions section, were applied to the 2018 AM and PM peak hour volumes to create 2038 volumes. The figures below illustrate the future 2038 projected traffic volumes.

2038 AM PEAK HOUR INTERSECTION VOLUMES



AM PEAK HOUR: 7:00-8:00

2038 PM PEAK HOUR INTERSECTION VOLUMES

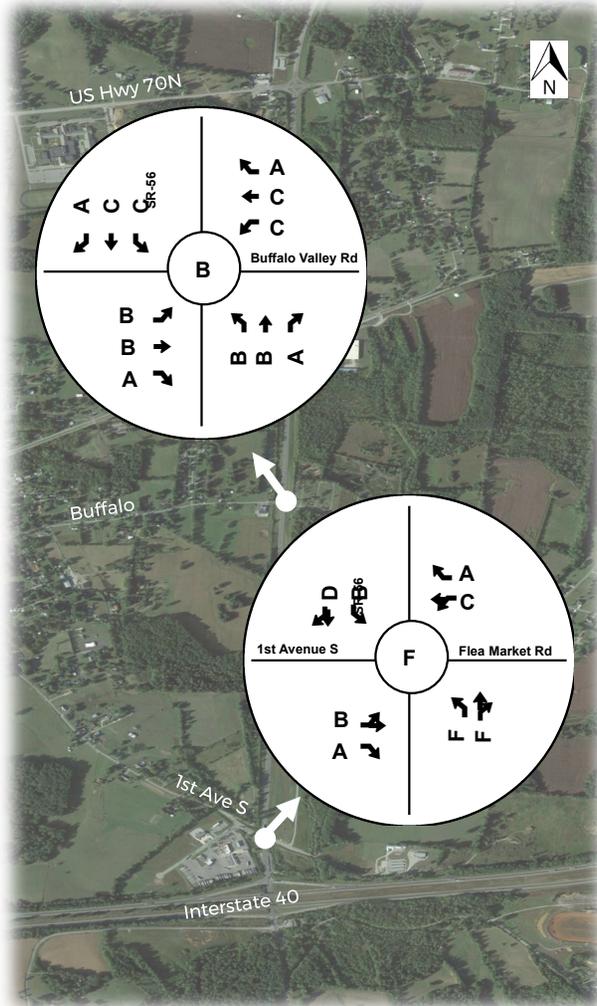


PM PEAK HOUR: 3:00-4:00 PM

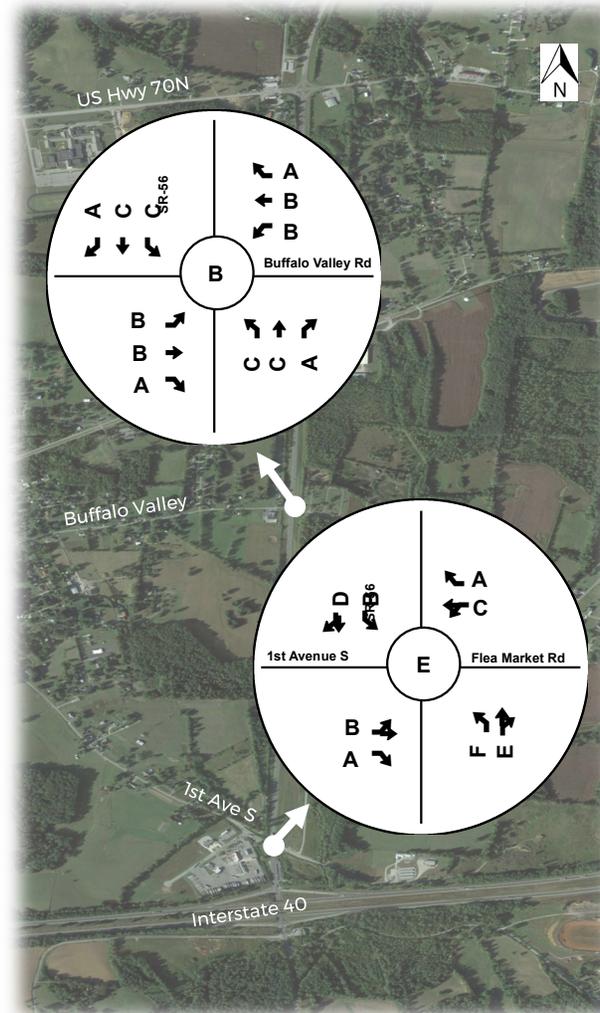
FUTURE 2038 INTERSECTION TRAFFIC OPERATIONS

For the future year analysis, projected 2038 traffic volumes were entered into Synchro (traffic modeling software), leaving all other conditions the same. As shown in the figures below, the SR-56 and 1st Avenue / Flea Market Road intersection is projected to operate at an overall unacceptable level of service during both the AM and PM peak hours. Specifically, during the AM peak hour both northbound movements will operate at LOS F. During the PM peak hour the northbound left movement will operate at a LOS F and the northbound thru/right will operate at LOS E.

2038 AM PEAK HOUR INTERSECTION LOS



2038 PM PEAK HOUR INTERSECTION LOS





IV RECOMMENDATIONS

OVERVIEW

The purpose of this corridor study was to plan for the impacts of expected growth in traffic along SR-56 and to develop strategies to promote the community and economic development, while also preserving safety for interstate travelers and the value of SR-56 as a major route for visitors. The improvements recommended for the project corridor include:

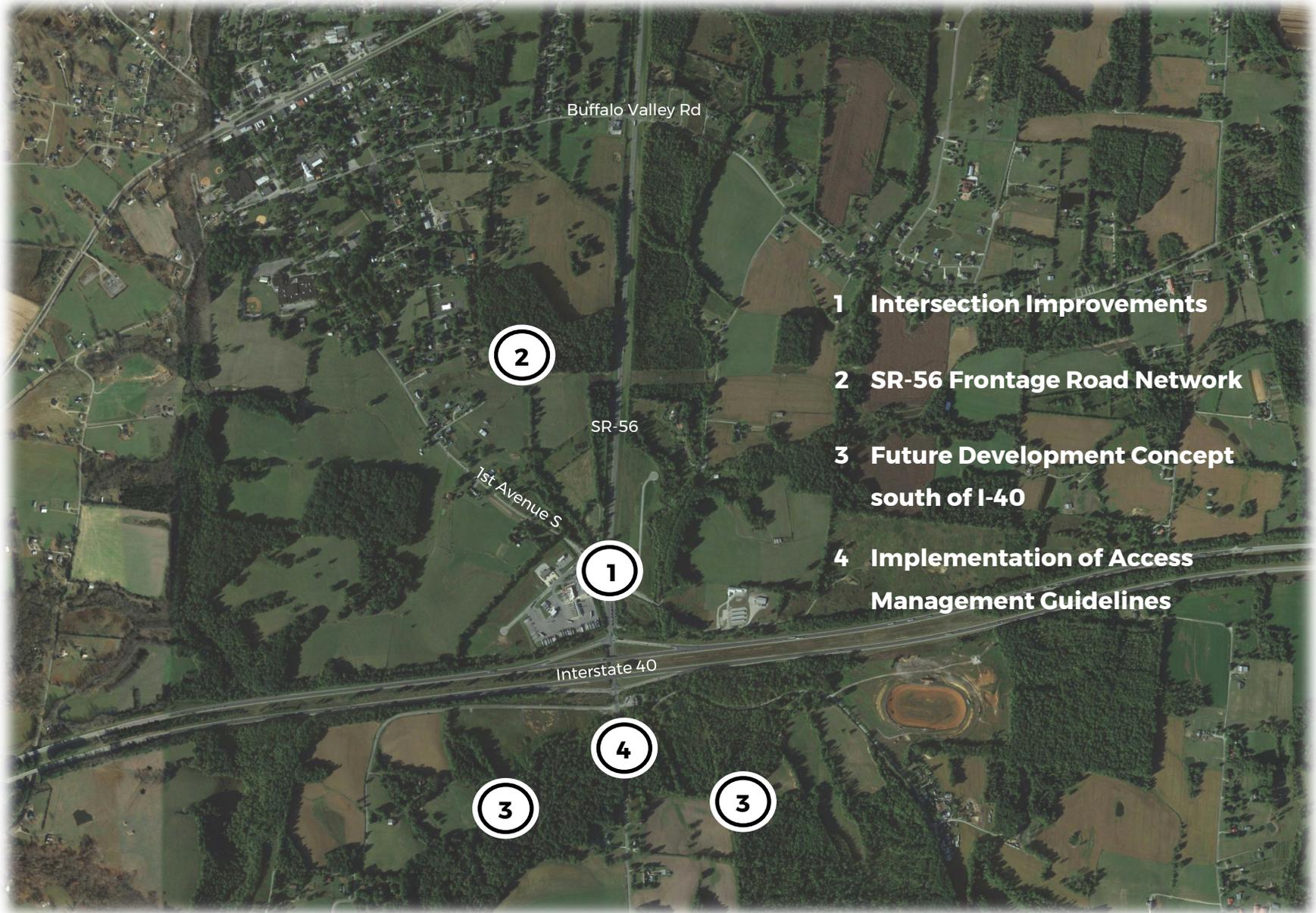
- Intersection improvements at SR-56 and 1st Avenue / Flea Market Road;
- Proposed frontage road network to facilitate development along SR-56 north of I-40;
- Future development concept for Baxter Road south of I-40; and
- Incorporate Access Management guidelines into future development and redevelopment.

The following pages include a map that illustrates the location of recommended projects and a detailed description of each recommendation.

GOAL

Develop strategies to promote community and economic development, while preserving safety and the value of SR-56 as a major route for visitors

RECOMMENDATIONS



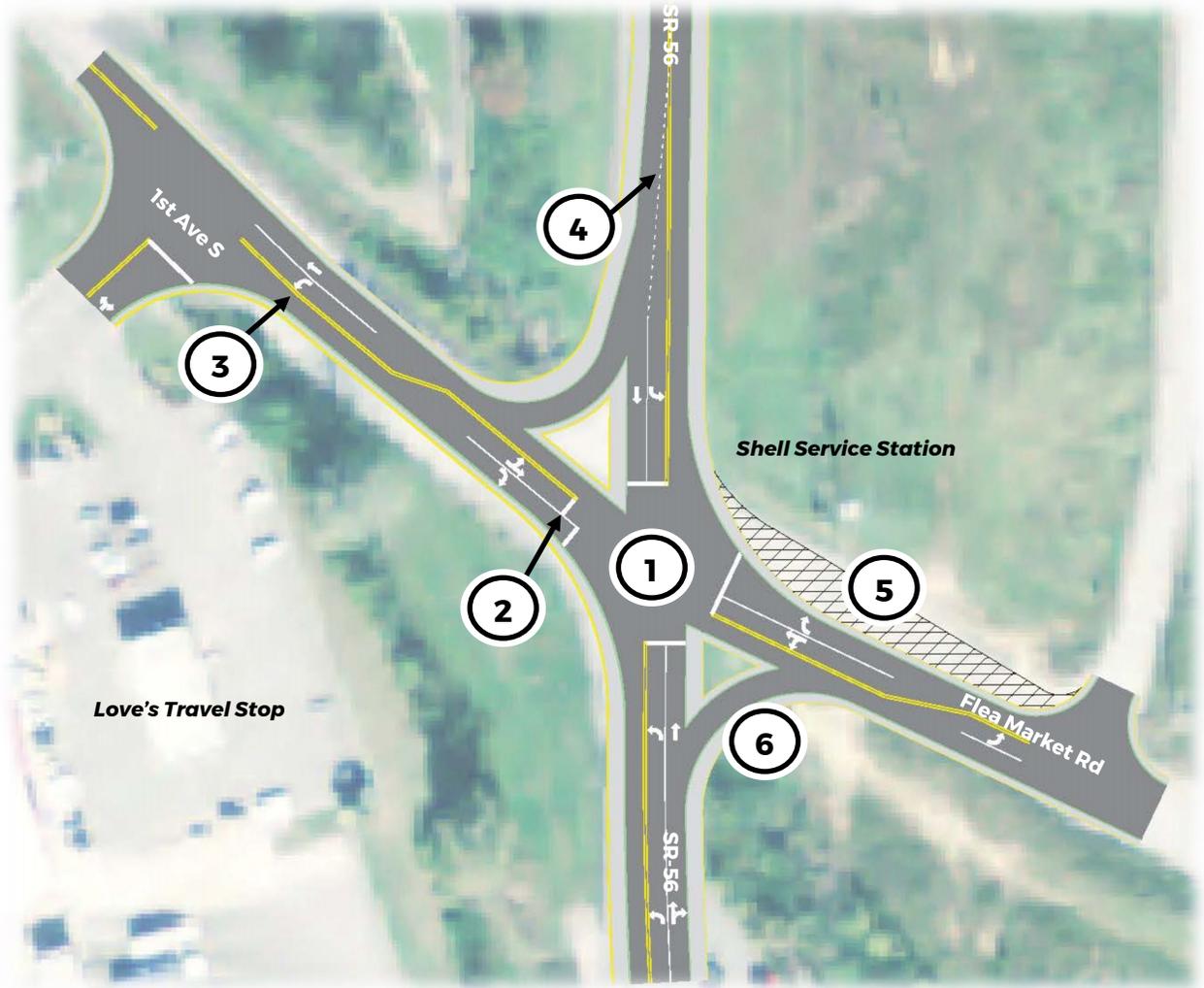
INTERSECTION IMPROVEMENTS

SR-56 AND 1ST AVENUE / FLEA MARKET ROAD

As discussed in the Chapter III future level of service analysis, the intersection of SR-56 and 1st Avenue / Flea Market Road is projected to operate at an unacceptable future year 2038 LOS F in the AM peak hour and a LOS E in the PM peak hour. The figure below illustrates suggested intersection improvements, which will improve future year 2038 LOS to a C in the AM peak hour and a D in the PM peak hour.

The improvements are not needed under current traffic conditions, but will be needed within the next 20 years based on traffic projections. As growth occurs, the City and TDOT should coordinate to monitor traffic volumes and take action when conditions warrant it.

- 1) Improve signal timing to include leading/lagging left turns on SR-56 and permissive left turns on 1st Avenue S / Flea Market Road.
- 2) Stagger stop bars on 1st Avenue S to provide a wider clearance for trucks turning from SR-56 onto 1st Avenue S.
- 3) Restripe 1st Avenue S to include a westbound left-turn lane at the Fast Lane (Love's Travel Stop entrance) intersection.
- 4) Add a dotted white line across the SR-56 southbound bay taper to help guide the thru traffic into the proper lane.
- 5) Shift westbound travel lanes further south on Flea Market Road to align with 1st Avenue S.
- 6) Channelize SR-56 northbound right turns on Flea Market Road.

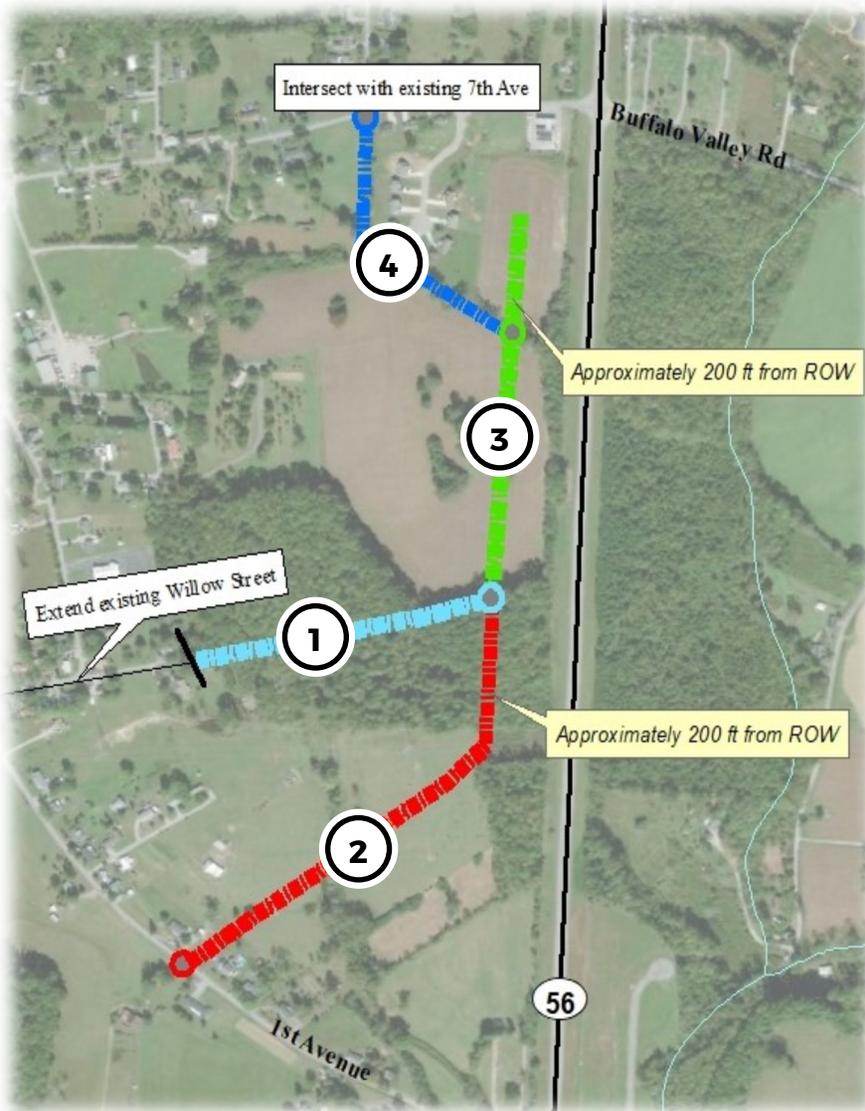


PROPOSED SR-56 FRONTAGE ROAD NETWORK

A frontage road is defined as a local road running parallel to a higher-speed, limited-access road. A frontage road is often used to provide access to private driveways, shops, houses, industries, etc. SR-56 is partially access controlled, meaning access to properties along the route can only be from the existing public cross streets (1st Avenue, Flea Market Road, Buffalo Valley Road, Main Street, and US 70 N). Providing additional connectivity between these cross streets would allow for better access to existing and future development. For this reason, a frontage road network is recommended along the west side of SR-56.

The concept to the left illustrates a frontage road network that could be built in phases as development occurs, through combined efforts of the City and private developers. Most of the proposed segments intersect with an existing roadway and some provide future developments with visibility from SR-56. Property owners, if they choose to build this system, may opt for a somewhat different alignment than what is shown in this concept depending on how their development is designed. The goal is to provide the type of connectivity shown, not exactly what is on the map at left.

High-level cost estimates are shown below, but will vary based on how property owners may choose to align their section..



Segment	Length (miles)	Cost with Curb/Gutter and Sidewalks	Cost without Curb/Gutter and Sidewalks
Segment #1 (Light Blue)	0.420	\$ 2,208,000	\$ 1,933,000
Segment #2 (Red)	0.417	\$ 2,251,000	\$ 1,978,000
Segment #3 (Green)	0.215	\$ 1,211,000	\$ 1,070,000
Segment #4 (Dark Blue)	0.246	\$ 1,381,000	\$ 1,219,000
Total Estimated Cost:	1.297	\$ 7,051,000	\$ 6,200,000

FUTURE DEVELOPMENT CONCEPT

SOUTH OF I-40 INTERCHANGE

As previously stated, several types of development are anticipated south of the I-40 interchange. Portobello America, Inc. is planning to locate its U.S. headquarters and first U.S. production facility at the former Tennessee Motor Speedway site. It is



anticipated that this development will also spur residential and highway commercial development around the interchange. To establish a guiding framework, it is recommended that a future land use plan be developed for the area, building on the concepts presented on the following page. Such a plan would provide guidance and a vision for shaping the community and reduce the potential for incompatible land uses located next to each other.

A compatible mix of retail, highway and neighborhood commercial, and light industrial uses are proposed for the area. Appropriate zoning categories would likely include:

- R-1: Low Density Residential
- R-2: High Density Residential
- R-M: Residential Medium Density
- C-1: Central Commercial District
- C-2: General Commercial



In addition to land use recommendations, a general concept for future roadway improvements is also illustrated on the figure. These projects build on improvements already being planned in conjunction with the Portobello location. They include realignment of Olan Maxwell Road, future signalization of an intersection, widening of Baxter Road, and additional connectivity with the larger road network.

CONCEPT FOR FUTURE DEVELOPMENT SOUTH OF I-40 INTERCHANGE



- ① Improve and realign Ditty Road (TDOT SIA Project) & Scarify portion of existing Ditty Road
- ② Future alignment of Olan Maxwell Road to align with Ditty Road
- ③ Future signal at Ditty Road / Olan Maxwell Road Intersection if warranted
- ④ Future Baxter Road three-lane section
- ⑤ Future extension to Highlands Park Blvd
- ⑥ Future extension to Elmore Town Road
- ⑦ Future R-1 (Low Density Residential) Development
- ⑧ Future R-M (Residential Medium Density) Development
- ⑨ Future R-2 (High Density Residential) Development
- ⑩ Future C-2 (General Commercial) Development: Auto and truck oriented development such as hotel, fast food, convenience store, high turnover sit-down restaurant
- ⑪ Future C-1 (Central Commercial District) Development: Community and regional retail service business, pedestrian oriented such as market, salon, dry cleaner
- ⑫ Future development internal roadway network
- ⑬ Future Portobello America Inc. and other future industrial development

ACCESS MANAGEMENT

SR-56 CORRIDOR

Access management centers on the balance between providing accessibility and mobility. The purpose of access management is to preserve the functional integrity of the roadway system and to promote the safe and efficient movement of people and goods while providing reasonable access to adjoining property owners. As previously discussed, the area south of the I-40 interchange is expected to experience a significant increase in development. Therefore, it is recommended that the City incorporate access management guidelines into any future approvals of development and redevelopment.

To provide adequate and reasonable service without compromising safety, it is recommended that spacing between driveways be no less than 350 feet, and the minimum spacing between signalized intersections be 1000 feet. There are a number of other tools and techniques available to consider for use as part of an access management plan. They include both physical design and techniques as well as policy related addressing land development and roadway design standards. The first two strategies listed below are part of the recommendations in this study:

- Create frontage roads (service roads) for direct land access parallel to major arterials.
- Provide inter-parcel circulation (ability to travel from one property to the next without entering the roadway).

Other strategies can be incorporated into the City's approval process for new development:

- Encourage shared driveways for adjacent land parcels / developments.
- Consolidate driveways where possible, and minimize left turn exits from driveways.
- Provide adequately designed turn and U-turn lanes.¹

The TDOT Manual for Constructing Driveway Entrances on State Highways also gives specific guidelines for the construction of access points along state highways. Although the state route designation for the corridor ends at the I-40 interchange, the City may wish to adopt some of the same driveway design standards for Baxter Road to help provide a safer traveling environment as development occurs.



1. **Federal Highway Administration (FHWA).** Access Management : A Key to Safety and Mobility. Washington, DC : FHWA, 2009. FHWA-SA-10-005.

